

CLAIMS

1. A sustained release drug device adapted for implantation in or adjacent to the eye of a patient, the drug delivery device comprising:

- (i) an inner drug core comprising an adrenergic agent;
- (ii) a first coating on the surface of the drug core, that is substantially impermeable to the passage of the adrenergic agent, having one or more openings therein which permit diffusion of the adrenergic agent, and which is substantially insoluble and inert in body fluids and compatible with body tissues; and
- (iii) one or more additional coatings that are permeable to the passage of the adrenergic agent, and which are substantially insoluble and inert in body fluids and compatible with body tissues;

wherein the first and additional coatings are disposed about the inner drug core so as to produce, when implanted, a substantially constant rate of release of the adrenergic agent from the device.

2. A sustained release drug device adapted for implantation in or adjacent to the eye of a patient, the drug delivery device comprising:

- (i) an inner drug core comprising an adrenergic agent;
- (ii) a first coating on the surface of the drug core, that is substantially impermeable to the passage of the adrenergic agent, having one or more openings therein which permit diffusion of the adrenergic agent, and which is substantially insoluble and inert in body fluids and compatible with body tissues; and
- (iii) one or more additional coatings that are permeable to the passage of the adrenergic agent, and which are substantially insoluble and inert in body fluids and compatible with body tissues;

wherein the impermeable coating has sufficient dimensional stability to be filled with an adrenergic agent core without changing its shape.

3. The device of claim 1, wherein the impermeable coating has sufficient dimensional stability to be filled with an adrenergic agent core without changing its shape.
4. A method for administering an adrenergic agent to the ciliary body of an eye, the method comprising implanting a sustained-release device in or adjacent to the eye, whereby the device delivers the adrenergic agent to the ciliary body of the eye, wherein the adrenergic agent concentration in the ciliary body is maintained at a therapeutically effective concentration for a period of at least 30 days.
5. A method for administering an adrenergic agent to the ciliary body of an eye, the method comprising implanting a sustained-release device according to any one of claims 1-3 or 14 in or adjacent to the eye, whereby the device delivers the adrenergic agent to the ciliary body of the eye, wherein the adrenergic agent concentration in the ciliary body is maintained at a therapeutically effective concentration for a period of at least 30 days.
6. The method of claim 4, wherein the adrenergic agent concentration in the ciliary body is maintained at a therapeutically effective concentration for a period of at least 180 days.
7. The method of claim 5, wherein the adrenergic agent concentration in the ciliary body is maintained at a therapeutically effective concentration for a period of at least 180 days.
8. The method of claim 4, wherein the adrenergic agent concentration in the ciliary body is maintained at a therapeutically effective concentration for a period of at least 360 days.
9. The method of claim 5, wherein the adrenergic agent concentration in the ciliary body is maintained at a therapeutically effective concentration for a period of at least 360 days.

10. The device according to any one of claims 1-4, 6, and 8, wherein the adrenergic agent is selected from the group consisting of brimonidine, aapraclonidine, bunazosin, timolol, betaxolol, levobetaxolol, levobunolol, carteolol, isoprenaline, fenoterol, metipranolol, clenbuterol, epinephrine, and dipivefrin.

11. The method according to claim 5, wherein the adrenergic agent is selected from the group consisting of brimonidine, aapraclonidine, bunazosin, timolol, betaxolol, levobetaxolol, levobunolol, carteolol, isoprenaline, fenoterol, metipranolol, clenbuterol, epinephrine, and dipivefrin.

12. The method according to claim 7, wherein the adrenergic agent is selected from the group consisting of brimonidine, aapraclonidine, bunazosin, timolol, betaxolol, levobetaxolol, levobunolol, carteolol, isoprenaline, fenoterol, metipranolol, clenbuterol, epinephrine, and dipivefrin.

13. The method according to claim 9, wherein the adrenergic agent is selected from the group consisting of brimonidine, aapraclonidine, bunazosin, timolol, betaxolol, levobetaxolol, levobunolol, carteolol, isoprenaline, fenoterol, metipranolol, clenbuterol, epinephrine, and dipivefrin.

14. A sustained release drug delivery device adapted for insertion in or adjacent to the eye of a patient, the drug delivery device comprising:

- (i) an inner drug core comprising at least one adrenergic agent;
- (ii) a coating layer on the surface of the drug core that is substantially impermeable to the passage of the at least one adrenergic agent, having one or more openings therein which permit diffusion of the at least one adrenergic agent, and that is substantially insoluble and inert in body fluids and compatible with body tissues; and

wherein the coating is disposed about the inner drug core so as to produce, when inserted a substantially constant rate of release of the adrenergic agent(s) from the device.

15. The sustained release drug delivery device of claim 14, wherein the inner drug core is admixed with a polymer matrix.

16. The sustained release drug delivery device of claim 15, wherein the polymer matrix is bioerodible.

17. The sustained release drug delivery device of claim 14, wherein the device is formed by co-extruding the inner drug core and the coating layer.

18. A sustained release drug delivery device adapted for insertion in or adjacent to the eye of a patient, the drug delivery device comprising:

- (i) an inner drug core comprising at least one adrenergic agent;
- (ii) a coating layer on the surface of the drug core that is partially or substantially permeable to the passage of the at least one adrenergic agent, having one or more openings therein which aid diffusion of the at least one adrenergic agent, and that is substantially insoluble and inert in body fluids and compatible with body tissues; and

wherein the coating is disposed about the inner drug core so as to produce, when inserted, a substantially constant rate of release of the at least one adrenergic agent from the device.

19. The sustained release drug delivery device of claim 18, wherein the inner drug core is admixed with a polymer matrix.

20. The sustained release drug delivery device of claim 19, wherein the polymer matrix is bioerodible.

21. The sustained release drug delivery device of claim 20, wherein the device is formed by co-extruding the inner drug core and the coating layer.